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EXAMINER	
COOK, JONATHON	

ART UNIT	PAPER NUMBER
2886	

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10/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,926	MELDAHL ET AL.	
	Examiner	Art Unit	
	JONATHON D. COOK	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *44-57* is/are allowed.

6)☒ Claim(s) *31-42* is/are rejected.

7)☒ Claim(s) *43 and 58-64* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 December 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/09/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Claim Objections

Claims 31 & 58 are objected to because of the following informalities:

Claim 31, is objected to because there should be a colon after "comprising" on the first line.

Claim 58 is objected to because it mixes both method and means for limitations. This makes the scope of the limitations confusing and should be corrected to clarify the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 31- 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ettemeyer** (US PAT 6,188,483) (Ettemeyer).

Regarding **Claims 31 & 33-35,** Ettemeyer discloses and shows in **figs. 1a & 2a-2c** an apparatus for determining deformation and elongation on curved bodies, comprising:

an interferometer having a laser **(3)** (applicant's common laser source of coherent reference and object beams) that produces an object wave **(28')** (applicant's coherent object light))and a reference wave **(27)** (applicant's reference beam) which are coherent with each other, a camera **(4)** (applicant's detector means), from the illustration it can be seen that the light source is expanding and the object wave **(28)** (applicant's reflected object beam) is produced after the object wave **(28')** is reflected from the object, the reference wave **(27)** and object wave **(28)** combine on the camera **(4)** to produce a speckle pattern of light **(see figs 2a-2c)** representing the reflection from

the object and this speckle pattern is detected by the camera (**4**) (**Column 5, lines 43-62**);

Ettemeyer does not explicitly disclose that the coherent light source is expanded and arranged to direct a converging object beam towards a point beyond the object, where the object beam is converged to a point that is approximately the same distance beyond the object as the object is spaced from the source;

However, the end result would be to illuminate an area on the object of a specific width and thus would be the same as is disclosed and an obvious variant for one or ordinary skill in the art to implement;

Therefore, it would have at least been obvious to one of ordinary skill in the art at the time the invention was made to arrange for the apparatus to direct a converging beam towards a point beyond the object which is approximately the same distance beyond the object as the object is spaced to the source because this way one could adjust the focus to control the width of the illumination without moving the detecting device itself (as would be needed in Ettemeyer), this would be more effective because it would minimize the possible problems that might result from moving the entire device such as misalignment from the vibration of doing so. Further, the distance that the beam focuses on beyond the object is just an optimization of the width of the illumination on the object, and would be done to receive the best ratio of area illuminated versus power of the illumination.

Regarding **Claim 32**, Ettemeyer discloses that camera (**4**) is generally a high-resolution, areal CCD-sensor (applicant's plurality of detectors arranged in an array) (**Column 4, line 66**).

Regarding **Claim 36**, Ettemeyer discloses that the measurement condition is a loaded condition of the measurement object (**1**), insofar as the surface of the measurement object (**1**) generally for example due to a pressure loading thereon, moves towards the measurement unit (**2**) or also moves away therefrom (for example due to a tensile loading in parallel relationship to the observed surface of the measurement object) (**Column 4, lines 40-46**).

Regarding **Claim 37**, Ettemeyer discloses the aforementioned. Further, all CCD's have a sampling rate, all area's have a size, and no movement of the object at all will still be a speed of movement and result in the speed of movement, sampling rate, and area size being arranged so that the sequential areas of the object studied overlap.

Regarding **Claims 38-40**, Ettemeyer discloses using a camera (**4**) comprising a CCD, which is a plurality of arrays of detectors but does not disclose those detectors are relatively narrow in the direction of movement and relatively long in the transverse direction or arranged in a line in the direction of movement of the instruments;

However, this is merely describing the use of linear detector arrays which are commonly known to one of ordinary skill in the art at the time the invention was made;

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a linear detector because they have faster read out times and are less costly than the more complex arrays.

Regarding **Claims 41 & 42**, Ettemeyer discloses the aforementioned but does not disclose a means for generating at least one additional converging laser beam and where there are three detector arrays each arranged to detect a speckle pattern of light reflected from a respective laser beam;

However, this is just merely duplication of parts that would be easily within the ability of one of ordinary skill in the art;

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Ettemeyer with additional beams and detectors, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8. Doing this would give the device the ability to detect more than one area at a time thus increasing the rate the device could inspect an entire object at.

Allowable Subject Matter

Claims 44-57 are allowed.

Claim 43 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 58-64 would be allowable if rewritten to overcome examiner's objections.

The following is an examiner's statement of reasons for allowance:

As to **Claim 43**, the prior art of record, taken alone or in combination, fails to disclose or render obvious the three detector arrays are arranged to have three different sensitivity directions, in combination with the rest of the limitations of the claim.

As to **Claims 44 & 58**, the prior art of record, taken alone or in combination, fails to disclose or render obvious the step of moving the instrument relative to the object while maintaining a constant distance, whereby the beam tracks across the surface of the object, in combination with the rest of the limitations of the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHON D. COOK whose telephone number is (571)270-1323. The examiner can normally be reached on Mon-Fri 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571)272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jonathon Cook
Patent Examiner
AU:2886
October 13th, 2008

/TARIFUR R CHOWDHURY/

Supervisory Patent Examiner, Art Unit 2886